CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources[a]

Source Category	Standard (grains/dscf)	Proposed Monitoring	Notes
I. A. 1. Natural-gas- and landfill-gas-fueled boilers with heat input of less than 340 MMbtu/hr	0.01 @ 3% O_2	No additional monitoring.	Landfill gas must contain less than 150 ppmv of sulfur compounds.
I. A. 2. Natural-gas- fueled turbines (cogeneration units)	0.01 @ 3% O_2	No additional monitoring.	
I. A. 3. a. Landfill- gas-fueled flares	0.01	No additional monitoring.	Landfill gas must contain less than 150 ppmv of sulfur compounds.
I. A. 3. b. Digester- gas-fueled flares	0.01	No additional monitoring.	Digester gas must contain less than 40 ppmv of sulfur compounds.
I. B. 1. Natural-gas-, digester-gas-, and landfill-gas-fueled boilers	0.1 to 0.3 @ 12% CO_2, 0.15, or 0.15 @ 6% O_2	No additional monitoring.	Digester and landfill gas must contain less than 200 ppmv of sulfur compounds.
I. B. 2. Natural-gas-, digester-gas-, and landfill-gas-fueled turbines	0.1 to 0.3 @ 12% CO_2, 0.15, or 0.15 @ 6% O_2	No additional monitoring.	Digester and landfill gas must contain less than 200 ppmv of sulfur compounds.

Source Category	**Standard (grains/dscf)**	**Proposed Monitoring**	**Notes**
I. B. 3. Natural-gas-, digester-gas-, and landfill-gas-fueled engines	0.1 to 0.3 @ 12% CO_2, 0.15, or 0.15 @ 6% O_2	No additional monitoring.	Digester and landfill gas must contain less than 200 ppmv of sulfur compounds.
I. B. 4. Natural-gas-, digester-gas-, and landfill-gas-fueled flares	0.1 to 0.3 @ 12% CO_2, 0.15, or 0.15 @ 6% O_2	No additional monitoring.	Digester and landfill gas must contain less than 200 ppmv of sulfur compounds.
II. A. 1. Nonutility distillate-oil-fueled emergency piston-type IC Engines	All generally applicable grain loading limits	A. Engine usage limited to maintenance, testing, and time of actual unforeseen emergencies. Usage for maintenance and testing not to exceed 200 hours per year. Maintain records of all engine usage (such as time or fuel meter readings) and maintenance. No additional monitoring.	Engines qualifying for this level of monitoring may not be used in conjunction with any utility voluntary demand reduction program.

Source Category	Standard (grains/dscf)	Proposed Monitoring	Notes
II. B. 1. a. Distillate-[b] oil-fueled-boilers and boilers fueled on residual oil[c] with sulfur content limited to below 0.5%	0.1 @12% CO_2	A. If annual fuel oil usage exceeds 2,000,000 gallons in any one year (source has two options): **Option 1:** Annual source test for particulate matter. **Option 2**: Source testing for particulate matter once per 5 year permit term and annual burner maintenance inspection (check operating pressure, temperature, air supply, vent, smoke spot, burner condition, heat-transfer surface condition, water treatment and blowdown, and leakage). Fuel temperature monitoring also required for residual oil combustion. B. Units with heat input greater than 10 MMbtu/hr, if annual fuel oil usage exceeds 1,000,000 gallons or 336 hours of operation (but does not exceed 2,000,000 gallons in any one year): Annual burner maintenance inspection (Check operating pressure, temperature, air supply, vent, smoke spot, burner condition, heat-transfer surface condition, water treatment and blowdown, and leakage) and, for residual oil combustion, fuel temperature monitoring. C. All other units: No additional monitoring.	

Source Category	Standard (grains/dscf)	Proposed Monitoring	Notes
II. B. 1. b. Residual-[e] and crude-oil-fueled boilers with sulfur content **not limited** to 0.5%	0.1 @12% CO_2	A. Annual particulate matter source testing for each year in which usage exceeds 500,000 gallons or 1000 hours of operation and, for residual oil combustion, fuel temperature monitoring.	
II. B. 2. Distillate-oil-fueled turbines	0.1 @12% CO_2 or 0.01 @3% O_2	A. If annual fuel oil usage exceeds 2,000,000 gallons in any one year (source has two options): **Option 1:** Annual source test for particulate matter. **Option 2**: Source testing for particulate matter once per 5 year permit term and annual maintenance inspection (borescope inspection of burner nozzles for cleanliness and warping, general combustion chamber for cleanliness and cracks, and inspection of water treatment system for steam or water injected turbines). B. Units with heat input greater than 10 MMbtu/hr, if annual fuel oil usage exceeds 1,000,000 gallons or 336 hours of operation (but does not exceed 2,000,000 gallons in any one year): Annual maintenance inspection (borescope inspection of burner nozzles for cleanliness and warping, general combustion chamber for cleanliness and cracks, and inspection of water treatment system for steam or water injected turbines). C. All other units: No additional monitoring.	**Notes**

Source Category	Standard (grains/dscf)	Proposed Monitoring	Notes
II. C. 1. a. Distillate-oil-fueled boilers and boilers fueled on residual oil with sulfur content limited to below 0.5%	0.2 to 0.3 @12% CO_2	A. If annual fuel oil usage exceeds 10,000,000 gallons in any one year during a 5 year permit term: Particulate matter source testing once per 5 year permit term. B. If annual fuel oil usage does not exceed 10,000,000 gallons in any one year during the permit term: No additional monitoring.	
II. C. 1. b. Residual- and crude-oil-fueled boilers with sulfur content not limited 0.5%	0.2 to 0.3 @12% CO_2	A. Particulate matter source testing once per five year permit term if oil usage exceeds 1,000,000 gallons in any one year. B. If annual fuel oil usage does not exceed 1,000,000 gallons in any one year: No additional monitoring	
II. C. 2. Distillate-oil-fueled turbines	0.2 to 0.3 @12% CO_2	A. If annual fuel oil usage exceeds 10,000,000 gallons in any one year during a 5 year permit term: Source testing for particulate matter once per 5 year permit term. B. If annual fuel oil does not exceed 10,000,000 gallons in any one year during the permit term: No additional monitoring.	

[a]Periodic monitoring for source categories not included to be determined on a case-by-case basis.

[b]Distillate oil is commonly referred to No. 2 Fuel Oil.

[c]Residual oil is commonly referred to as No. 6 Fuel Oil.